Algebra 1

Unit 4: Radicals and Polynomials

Notes

Day 4 – Irrational and Rational Numbers

Rational Numbers:

- Can be expressed as the quotient of two integers (i.e. a fraction) with a denominator that is not zero.
- Counting/Natural, Integers, Fractions, and Terminating & Repeating decimals are rational numbers.
- Many people are surprised to know that a repeating decimal is a rational number.
- $\sqrt{9}$ is rational you can simplify the square root to 3 which is the quotient of the integers 3 and 1.

Examples: -5, 0, 7, 3/2, 0.26

Irrational Numbers: RAZY

Can't be expressed as the quotient of two integers (i.e. a <u>fraction</u>) such that the denominator is not

o If your number contains π , a radical (not a perfect square), or a decimal that goes on forever (does not repeat), it is an irrational number.

Practice: Classify each number as rational or irrational and explain why.

a. $\sqrt{15}$

b. 1/4

c. $\sqrt{2} \cdot \sqrt{18}$

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d. $\sqrt{25} + \sqrt{1}$ 5 + 1 = 6

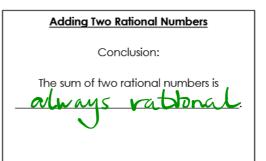
Algebra 1

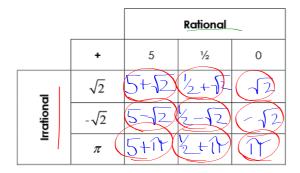
Unit 4: Radicals and Polynomials

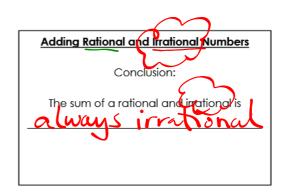
Notes

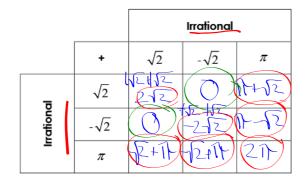
Adding Rational and Irrational Numbers

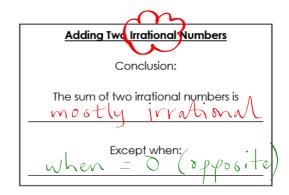
		Rational		
	+	5	1/2	0
Rational	5	10	5.5	5
	1/2	(5.3)		(2)
	0	5	1/2	(0)











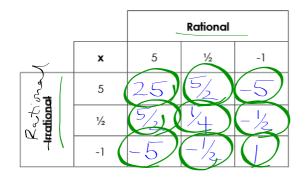
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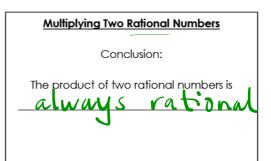
Algebra 1

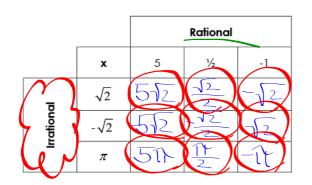
Unit 4: Radicals and Polynomials

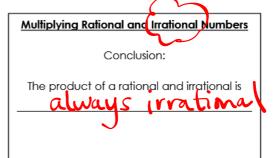
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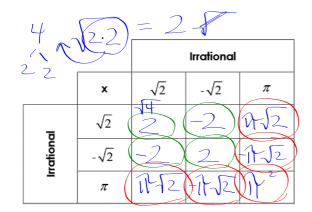
Multiplying Rational and Irrational Numbers











Multiplying Two Irrational Numbers

Conclusion:

The product of two irrational numbers is

multiply Same It

*If you ever multiply an irrational number by 0 (which is a rational number), your outcome will always be 0, which is a rational number. Most of the time, when multiplying, it will say a nonzero rational number, which means 0 is excluded from the rational number set.

Ex. $\sqrt{2} \cdot 0 = 0$

Ex. $\pi \cdot 0 = 0$

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